

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-9 (Canceled).

Claim 10 (New): A dosing pump for a liquid additive in fuel of a heavy fuel engine, said pump comprising:

    a piston;

    a cylinder; and

    an actuator for moving the piston axially in the cylinder, wherein the actuator is a high resolution linear actuator.

Claim 11 (New): The dosing pump according to claim 10, further comprising a manifold having at least one inlet and one outlet check valve that are passive, one-way valves.

Claim 12 (New): The dosing pump according to claim 10, wherein said pump is a syringe pump of which the piston contacts a solid surface at an end of each dose cycle.

Claim 13 (New): The dosing pump according to claim 10, wherein the linear actuator is driven by a rotary electric motor through a gear reduction.

Claim 14 (New): The dosing pump according to claim 10, wherein said pump has a capacity equal to a maximum dose required so that a required additive volume is always dispensed through only one cycle of the pump.

Claim 15 (New): The dosing pump according to claim 10, wherein said pump has a capacity lower than a maximum dose so that a required additive volume is dispensed through one or more pump cycles.

Claim 16 (New): The dosing pump according to claim 10, further comprising a seal to ensure tightness between the piston and the cylinder.

Claim 17 (New): The dosing pump according to claim 16, wherein the seal is one of a sliding seal, disposed radially on the piston head and sliding with the piston inside the cylinder, or a low friction dish seal having at least one portion attached to the piston and moving the piston.

Claim 18 (New): A fuel system comprising a liquid fuel additive dosing pump according to claim 10.